

Title (en)

METHOD FOR PRODUCING A THERMOPLASTICALLY DEFORMABLE FIBRE-REINFORCED FLAT SEMI-FINISHED PRODUCT

Title (de)

VERFAHREN ZUR HERSTELLUNG EINES THERMOPLASTISCH VERFORMBAREN FASERVERSTÄRKTEN FLÄCHIGEN HALBZEUGS

Title (fr)

PROCÉDÉ DE FABRICATION D'UN DEMI-PRODUIT PLAN RENFORCÉ PAR DES FIBRES POUVANT ÊTRE DÉFORMÉ DE MANIÈRE THERMOPLASTIQUE

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Abstract (en)

[origin: WO2020094671A1] The invention relates to a method for producing a thermoplastically deformable, fiber-reinforced, flat semi-finished product having a composite structure (A-B-A') or (A-B), comprising: • a core layer (B) consisting of a porous reinforcement fiber thermoplastic material, having a mass per unit area of 300 to 3,000 g/m², a fiber content of 20 to 60 wt.% and an air pore content of 5 to 80 vol.%, and • one or two cover layers (A, A') which are integrally bonded to the core layer (B) and are made of a woven or nonwoven reinforcement fiber fabric impregnated with thermoplastic, each cover layer having a thickness of 0.2 to 2.5 mm, a mass per unit area of 200 to 4,000 g/m² and an air pore content of less than 3 vol.%. According to the invention, the following method steps are carried out: • the following are applied to one or both sides of a core layer precursor in the form of a flat, porous reinforcement fiber thermoplastic material having a mass per unit area of 300 to 3,000 g/m², a fiber content of 20 to 60 wt.% and an air pore content of 20 to 80 vol.%: at least one woven or nonwoven reinforcement fiber fabric having a mass per unit area of 100 to 1,000 g/m², and a thermoplastic layer which has a low viscosity compared with the thermoplastic material of the core layer precursor and a mass per unit area of 50 to 1,000 g/m²; • the layer structure (A-B) or (A-B-A') thus formed is heated and compressed such that the thermoplastic of the low-viscosity thermoplastic layer is melted and penetrates into the applied woven or nonwoven reinforcement fiber fabric and into the core layer and, after cooling, forms an integral bond of the core layer and the cover layer.

IPC 8 full level

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